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AUTO-IMMUNITY IN REITER'S SYNDROME*

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Reiter's syndrome is considered to be a rheumatic disorder complicating a lower genito-urinary infection which usually arises after sexual intercourse. Despite close search no pathogenic micro-organisms have been established as the cause of this disease. *Mycoplasma*, *T. vaginalis*, and bacteria are not now considered to have any aetiological relationship to it; *C. oculogenitale*, which has lately been cultivated, is still considered by some to have a possible role in the aetiology but so far there is no real evidence. It seems that elsewhere this disease arises from some other source than a causative organism, and for this reason we have investigated the possibility that an abnormal immune reaction may underlie the disorder of Reiter's syndrome and other similar conditions.

We have been able to demonstrate the presence of circulating auto-antibodies to antigen prepared from healthy human prostate gland (Grimble, 1964). Tissue antigens, not only from prostate but also from liver, kidney, and colon were tested against sera from cases of Reiter's syndrome, ankylosing spondylitis, uveitis, rheumatoid arthritis, acute rheumatic fever, and prostatitis.

The results (Table I) show that almost all cases of Reiter's syndrome and ankylosing spondylitis reacted with prostatic antigen, whereas only a small proportion reacted with liver and kidney antigen. The results in uveitis were somewhat equivocal and the positive results were of low titre. There was a distinct difference between the response with prostatic antigen in cases of Reiter's syndrome and ankylosing spondylitis and that with liver and kidney antigens but this difference was not apparent in either rheumatoid arthritis, which tended to react with none, and acute rheumatic fever, which tended to react with all antigens. The results in acute rheumatic fever suggest that here we had a non-specific alteration in the antibody response such as occurs in the so-called "collagen disorders".†

TABLE I
RESULTS OF HAEMAGGLUTINATION REACTIONS

Disease	Total No. of Cases	Antigen (Positive Reactions)		
		Prostate	Liver	Kidney
Reiter's Syndrome	21	20	4	4
Ankylosing Spondylitis	8	8	2	2
Uveitis	9	4	0	0
Rheumatoid Arthritis	18	2	1	0
Rheumatic Fever	7	7	5	4

It was also interesting that there was no response to colon antigen, in view of the opinion sometimes stated that colitis forms part of Reiter's syndrome.

Most cases of subacute prostatitis reacted to prostatic antigen but not to liver or kidney antigen. When a number of female controls and a larger number of out-patients taken at random were tested, there were no positive reactions amongst the females and only an insignificant number amongst the out-patients.

To obtain further evidence of the presence of an auto-immune reaction against prostate tissue, we investigated the presence of complement-fixing antibodies in these patients. The antigen chiefly used for this was the same as that used in the haemagglutination test (Grimble, 1964), and a second prostatic antigen, a simple homogenate, was used in addition. This was prepared by destruction of the prostate gland and filtration in normal saline. The preparation

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† Including acute cases of Reiter's syndrome which were found to react with all three antigens.

was used undiluted about 5 ml. being obtained from one gland. The results are shown in Table II.

TABLE II
RESULTS OF COMPLEMENT-FIXATION TEST

Disease	Results of Test	
	Positive	Negative
Reiter's Syndrome	15	6
Ankylosing Spondylitis	2	3
Uveits	3	4
Prostatitis	2	3
Controls	3*	11

* One had had rheumatic fever, one thyroiditis (auto-immune disease), and one gonorrhoea.

We may therefore infer that there is a group of disorders associated with an auto-immune reaction related to prostatic inflammation. However, since only a proportion of cases of subacute prostatitis develop Reiter's syndrome, there must be other aetiological factors which contribute to the actual attack.

The significance of the presence of tissue antigens and the problem of whether, and in what way, auto-antibodies are related to the disease are questions which must be approached with care, and one has to be wary of relating their presence directly to that of the disease process.

The development of auto-immune disease depends in some way upon a faulty homoeostatic mechanism resulting in the body's own tissue being antigenic and appearing as foreign to the immune-competent cells (Burnet, 1962). Such a direct relationship to disease has been proved in recent years in thyroiditis and also neuritis, with the assistance of animal studies (Rose and Witebsky, 1956; Melnick, 1963).

Further work on these lines is planned, in order to examine the significance of the antigenic stimulus of prostatitis, to relate this to the occurrence of rheumatism in its several forms, and to elucidate some of the mechanisms involved.

Summary

Evidence has been sought for the occurrence of auto-immunity in rheumatic syndromes. Circulating antibodies of precipitin and complement-fixing types have been demonstrated in Reiter's syndrome and ankylosing spondylitis. This fact is discussed.

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Auto-immunité du syndrome de Reiter

RÉSUMÉ

L'auteur a étudié l'auto-immunité dans les syndromes rhumatismaux. Les anticorps de la précipitine et ceux qui fixent le complément ont été identifiés dans les cas de syndrome de Reiter et de spondylite ankylosante. On discute l'importance de ces constatations.